



Unlocking Low-Cost Lending for Electric Two- and Three-Wheelers

**Scaling Lessons from Electric Two- and Three-
Wheeler Markets**

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May 14th, 2024

Three Conditions Fundamental to Mobilizing Electric Two- and Three-Wheeler Financing

Three aspects have played a critical role in the growth and development of the electric two- and three-wheeler segment. These aspects create the necessary supportive market conditions for scaling financing and encouraging private investment.



Supportive government policies



Local financiers willing to extend credit lines towards electric two- and three-wheelers



A flourishing product market

The Challenge of Compounding EV Asset and Borrower Risk

Risk Type	Description	EV / ICE comparison
Counterparty Risk Linked with the borrower's ability to repay their loan	Most drivers/owners of two- and three-wheelers come from low-income backgrounds and are new to credit with limited collateral to offer against the loan. Secondly, EV-focused fleet operators (especially those running electric three-wheelers), mobility, battery, and charging-focused startups are new in the market and have aggressive expansion plans posing risks.	Similar risk for ICE & EVs
Product Risk Associated with batteries and charging technologies that are new to the market	EVs have a higher product risk as the technology is nascent compared with ICE. Several OEMs are new to the market and yet to establish themselves financially like ICE OEMs.	Higher risk in EVs
Operation Risk Arises when the vehicle is not functional due to the paucity of charging service stations & mechanics	EVs have fewer parts, which reduces expected maintenance costs. However, the lack of mechanics who can repair EVs as opposed to ICE vehicles contributes to operational risks for EVs. Additionally, constraints regarding public charging access compared to the fuel stations contribute to higher operational risk.	Higher risk in EVs
Repossession Risk Linked with the identification of the vehicle location and retrieval in case of default	EVs can lower the repossession risk as they can be equipped with a telematics device that offers the vehicle's location in real-time. However, a specific legal protocol must be followed to retrieve the vehicle from the identified location, which takes time.	Lower risk in EVs
Residual Value Risk The difficulty in reselling a repossessed EV in case of default	EVs have high residual risk as the market for secondary sales has yet to be developed to the level of ICE vehicles.	Higher risk in EVs

Three Reinforcing Approaches to Mobilize EV Financing



Concessional Finance – this type of financing provides capital with terms that are not typically available in private commercial markets, where investors expect a market rate of return on their investments.

Examples – concessional loans, partial risk-sharing guarantee



De-Risking Measures – aimed at reducing, managing, or re-allocating risks between market actors these measures can instill market confidence.

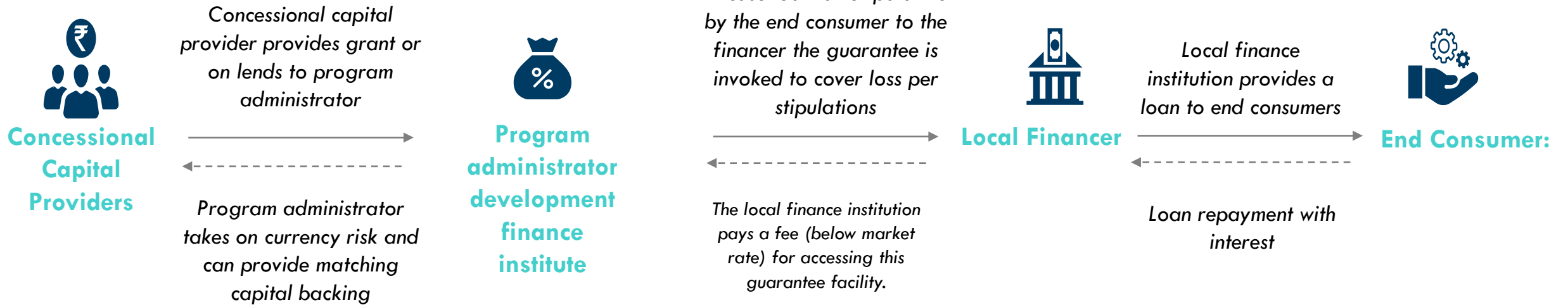
Examples – telematics data, secondary sales market development, product quality assurance, collections, expanded insurance coverage, repossession, insurance



Specific Business Models – aimed towards re-allocating financial risks and mobilizing investments by conducting business in a manner that more equitably shares risks amongst financiers, fleet operators, OEMs, and end-consumers.

Examples – leasing, mobility as a service models

Loan Guarantees/ partial risk sharing



Participating Actors in India



Loan guarantees can lead to savings for borrowers



Based on market interviews in India, DRMs can bring down the risk premium in the electric three-wheeler commercial segment, enabling a potential 200–300 basis points reduction in borrowers' interest rate, translating to \$253 of interest savings per loan (INR 20,700)



Scaled market-wide, this could lead to cumulative savings of \$267 million (INR 2,000 crore) for electric cargo three-wheeler borrowers, assuming EV sales in this segment can reach a 60% market share by 2030

Realized Interest Savings per Cargo Electric Three-Wheeler Loan



Source: RMI Analysis based on terms and conditions of the initial facility

De-Risking Lending for a Brisk EV Uptake: A Practical Guide on Key De-Risking Measures for Electric Two-and Three-Wheelers in India

Type	De-risking measures	Description	Impact on financiers expected loss
General Measures	Collections System	Financiers build a hybrid collection system to handle digital and cash payments and digital reminders, integrating it with the loan management system.	<ul style="list-style-type: none"> A digital collection system aligned with borrowers' revenue generation and spending patterns can help financiers manage their customer risk
	Repossession System	Financiers strengthen their vehicle repossession ability, reducing the time it takes to locate and retrieve a vehicle from a defaulted borrower.	<ul style="list-style-type: none"> A strong on-ground repossession team and clear procedural practices can reduce the repossession time
	Insurance	Financiers prioritise lending to vehicles with comprehensive insurance over the loan duration and incentivise borrowers to take on additional EV-specific insurance products.	<ul style="list-style-type: none"> Insurance offers a safeguard for the borrower and the lender, as it enables both parties to recoup capital in case the EV is damaged or rendered unusable
EV Specific Measures	Telematics Data	Financiers use telematics data to understand vehicle utilisation to assess driver income, identify the vehicle's location in case of default and evaluate battery health to establish residual value.	<ul style="list-style-type: none"> Telematics data can help financiers assess the borrower's ability to repay an EV loan The use of telemetric data reduced the time to locate a vehicle in instance of default
	Secondary Sales Market	Financiers work to obtain a high residual value for repossessed EVs in the secondary market via tie-ups with EV ecosystem actors.	<ul style="list-style-type: none"> The existence of an EV secondary market would make financiers confident to provide loans to the segment as they would be assured of recouping value through resale
	Product Quality Assurance	Financiers prioritise lending to vehicles supported by OEMs offering quality assurance through warranties (at least until the loan tenure), after-sales services and financial guarantees in case of product failure.	<ul style="list-style-type: none"> Extended warranties and strong after-sale services have been found to reduce loss given default

What Will it Take to Achieve Affordable Financing for Borrowers?



Identify a blend of funding instruments



Concessional capital can foster market growth; unlocking further commercial and private investment



Implement de-risking measures

De-risking measures work to mitigate risk, lowering expected loss



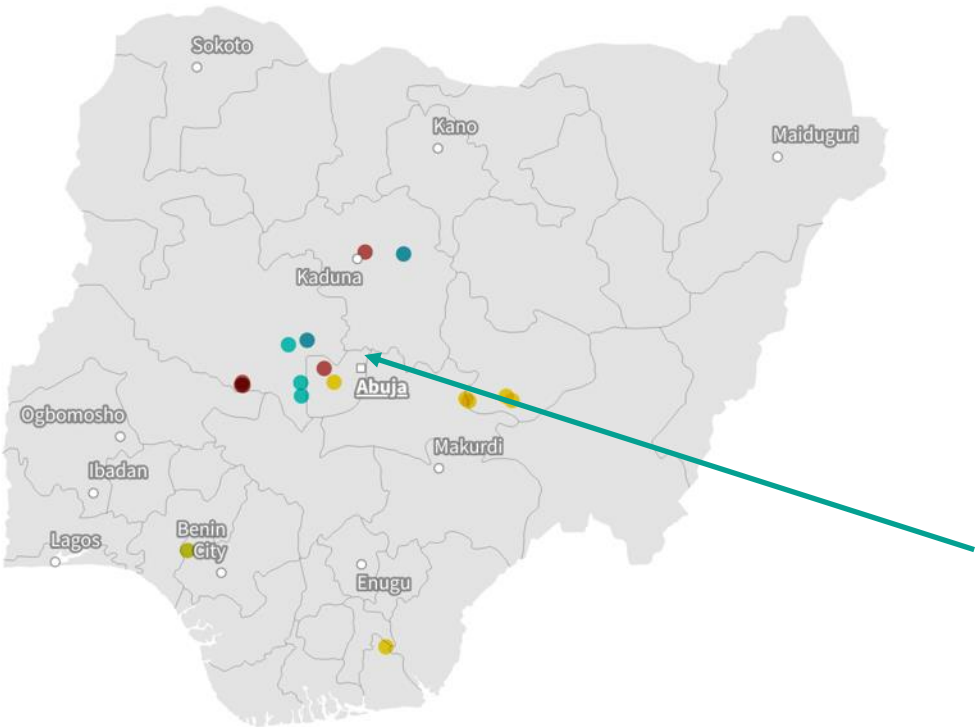
Innovative business models

Innovative business models offer a means to allocate risks to more suitable market actors



Improved lending terms for electric two- and three-wheeler loans

Adapting finance de-risking to Nigeria



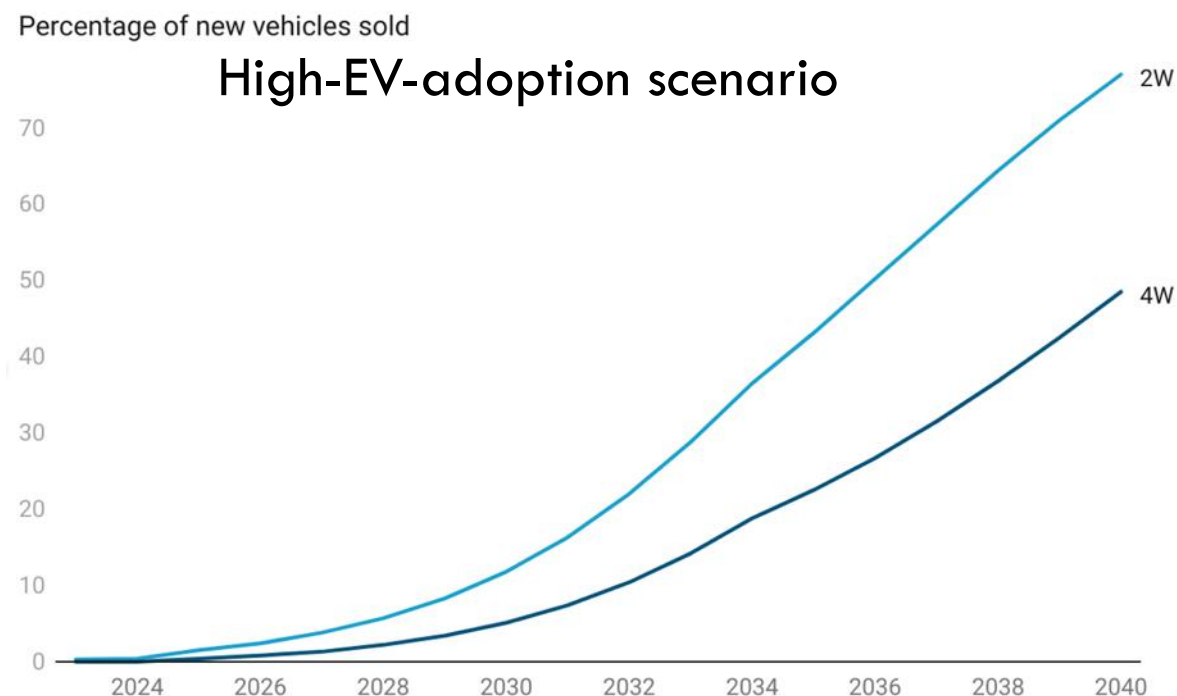
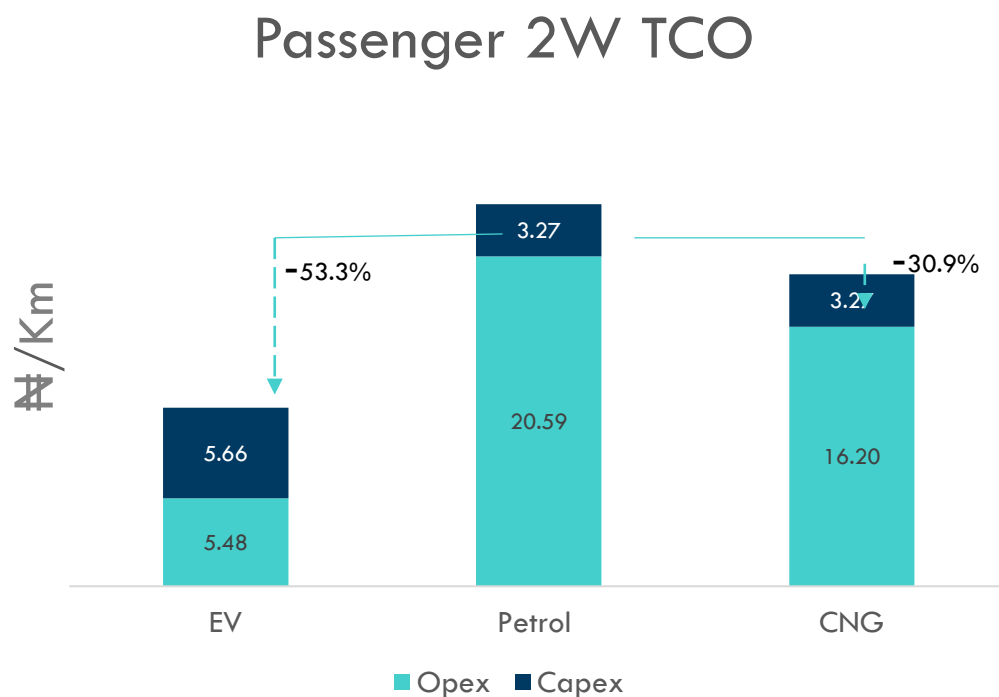
Supporting finance de-risking, policy development, and consumer and corporate engagement

Deploying electric two-wheelers to serve farmers in Niger and Kaduna states.



RMI is bringing lessons learned in India to rural e2W demonstrations and collaboration on national e-mobility strategy with Nigeria's Energy Transition Office

Insight: Cost advantages of e2W suggest explosive near-term growth can also occur in Nigeria

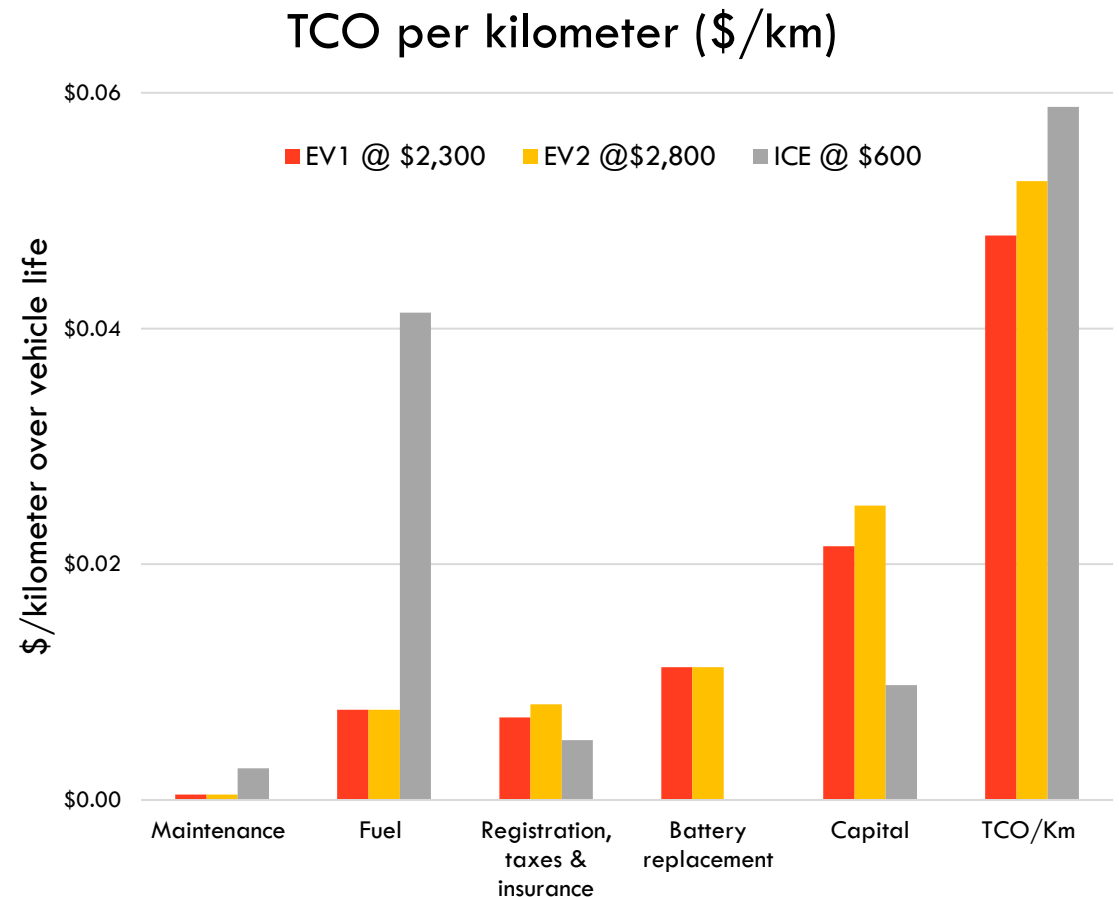


2W adoption rates based on the weighted average of 100 km and 150 km range EV two-wheelers. 4W adoption rate based on weighted average of sedans and SUVs with a range of 250 km and 350 km respectively.

- RMI's preliminary TCO analysis shows electric vehicles are currently lower cost options than petrol and CNG
- If an enabling regulatory environment is provided, EV growth will be rapid

Insight: After driving >50,000 kilometers, data shows rural e2Ws save compared to petrol two-wheelers in Nigeria

- At Nigeria's current energy prices, **EV drivers spend nearly 6x less on fuel** for every kilometer compared to petrol vehicles
- **EVs cost ~2.5x more up front**
- Once charging is available and a high-mileage use case identified, the 'total cost of ownership' (TCO) analysis hinges on cost of capital for drivers
- Expanding the EV fleet could increase minigrid sales and transport cost savings





Thank You!

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